

Appl. No. 10/517,279
Amdt. Dated September 21, 2006
Reply to Office Action of April 21, 2006

REMARKS/ARGUMENTS

Claims 1, 3-5, 12, 13 have been amended, claims 2, 3, 6, and 13-28 are canceled and claims 29 and 30 are new.

The objection to claims 1, 4 and 5 is overcome by the amendment to claim 1 changing "ton" to "top."

The following features of the invention are claimed in amended claim 1

(1) According to the amended claim 1, the at least one auxiliary terminal has a shape smaller than the shape of each of the main positive and negative terminals. More specifically, the at least one auxiliary terminal is smaller than each of the main positive and negative terminals. For the storage battery provided with plural terminals, various devices are attached, and of them, a device (e.g., a circuit for starting an engine when the battery is used for an automobile), which requires remarkably high power by itself, is preferably connected to a terminal that causes only a small power loss in power transmission. Also, preferable are terminals which can be easily identified whether they are those to which the device is to be connected, which contributes to ease of connection. In this regard, the main terminals and auxiliary terminals of the present invention are different in size, and therefore the terminals that cause only small power loss in power transmission can be securely identified at a glance.

(2) Still according to the amended claim 1, since the at least one auxiliary terminal is disposed inside of the recess on the top of the lid, it is possible to prevent the auxiliary terminal from contacting various external parts or members to be connected to the main terminals, such as cords. Therefore, this arrangement contributes to ease of handling of cords when connecting the same to the main terminals or auxiliary terminals, and for example; suppress the disadvantage that a cord connected to such as an auxiliary terminal is forcibly and undesirably bent or folded. It is also to be noted that the recess may provide a space for mounting an electric component, depending on the size, shape or the like.

(3) In addition, according to the amended claim 1, the connection portion has a part embedded inside of the lid that extends from the at least one of the main positive and negative terminals partly embedded in the lid, the part of the connection portion having a protruding end that protrudes to the inside of the recess. Thus, only the portion required for connection with a cord or terminal is exposed to the outside, while the residual portion is embedded, preventing the exposure to the outside as much as possible. Accordingly, it is possible to appropriately prevent unintentional contact or interference of a cord or terminal to the auxiliary terminals or the main terminals.

The rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Carter U.S. Patent No. 5,877,609 is respectfully traversed. Carter (US 5,877,609) is different from the present invention in the following points:

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(a) A recess is not provided on the top of the lid. In this respect, the Examiner points out that the at least one auxiliary terminal is located in said recess (no. 362, 364, 366, and 368 in Carter's Fig. 4). However, this recess is not provided on the top of the lid, but on connection portions (340, 350 in Carter's Fig. 4).

(b) The connection portions (140 and 150 in Fig. 2, 240 and 250 in Fig. 3, and 340 and 350 in Fig. 4) are not those of the present invention, namely a part embedded inside of the lid that extends from the at least one of the main positive and negative terminals partly embedded in the lid, the part of the connection portion having a protruding end that protrudes to the inside of the recess. That is, the connection portions of Carter are entirely exposed on the top of the lid.

(c) The auxiliary terminal is not disposed in the recess.

The rejection of claims 4, 5, and 7 - 11 under 35 U.S.C. § 103(a) as being unpatentable over Carter U.S. Patent No. 5,877,609 in view of Lopez -Doriga U.S. Patent No. 4,634,642 is respectfully traversed. Lopez -Doriga is different from the present invention in the following points:

(a) All the terminals are the same in size and do not provide significance for identification.

(b) A recess is not provided on the top of the lid.

(c) Auxiliary terminals are not disposed in the recess.

(d) Like the prior art mentioned in the specification of the present application, a battery of Lopez-Doriga is designed to be adapted to anyone of rightward or leftward orientations, and therefore is designed for the purpose different from a purpose of the present invention that is to enable simultaneous supply of power through plural terminals.

The features of the present invention recited in the amended claim 4 are not taught or suggested in the cited references. Although the Examiner points out that Lopez-Doriga discloses wherein the connection portion is located in the inside of the lid and at least partially embedded in resin filled and cured in the recess (no. 7 in Fig. 3), this is embedded in the inside of the lid. It is to be noted that according to the original and amended claim. 4, a portion of the auxiliary terminal is embedded not in the lid but a (newly supplied) resin which is filled and cured in the recess formed on the top of the lid.

Claim 5 depends from claim 4. Not only are features of amended claim 4 not disclosed, but the additional feature of amended claim 5 is not disclosed at all.

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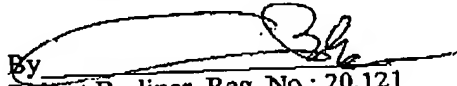
The features of claims 7 and 8 are also not disclosed at all. The Examiner points out that Lopez-Donga discloses wherein a downwardly extending portion of a connector member obliquely extends from an upper portion. However, a portion 7 in Fig. 3 is not obliquely oriented like in the present invention. As disclosed in the specification of the present application, the present invention has the advantages of preventing a phenomenon in which electrolyte moves upward through the surface of the connection portion, dispersing the force applied to the monolithical part, thus preventing the deformation of the bushing, the connection member and the like. These advantages cannot be produced by the member of Fig. 3 of Lopez-Donga.

The rejection of claim 12 under 35 U.S.C. § 103(a) as being unpatentable over Carter U.S. Patent No. 5,877,609 in view of Hwa U.S. Patent No. 6,121,750 is respectfully traversed. Hwa neither discloses nor suggests any of the claimed differences in the present invention from Carter referred to above in the response to the rejection of claim 1 under 35 U.S.C. § 102(b) and therefore the combination cannot make claim 12 (which depends from claim 1) obvious.

The Commissioner is hereby authorized to charge payment of any fees required associated with this communication or credit any overpayment to Deposit Account No. 50-3881. If an extension of time is required, please consider this a petition therefor and charge any additional fees which may be required to Deposit Account No. 50-3881. A duplicate copy of this paper is enclosed.

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Respectfully submitted,

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